

In the claims:

1. (Currently amended) A low temperature autoignition composition for safely initiating combustion of a main pyrotechnic charge in a gas generator or pyrotechnic device exposed to flame or a high temperature environment, consisting essentially of:

an intimate a mixture of an a silver nitrate oxidizer composition and a powdered metal fuel, wherein the silver nitrate oxidizer composition consisting essentially of one of: comprises

(a) silver nitrate; or

(b) a comelt or mixture consisting essentially of comprising silver nitrate and at least one additional component selected from the group consisting of an alkali metal nitrate, an alkaline earth metal nitrate, a complex salt nitrate, a dried[[,]] hydrated nitrate, an alkali metal chlorate, an alkali metal perchlorate, an alkaline earth metal chlorate, an alkaline earth metal perchlorate, ammonium perchlorate, sodium nitrite, potassium nitrite, silver nitrite, a complex salt nitrite, a solid organic nitrate, and a solid organic nitrite; and wherein

the powdered metal fuel is selected from the group consisting of molybdenum, calcium, strontium, barium, titanium, zirconium, vanadium, niobium, tantalum, chromium, tungsten, manganese, iron, cobalt, nickel, copper, zinc, cadmium, tin, antimony, bismuth, aluminum, silicon, and mixtures thereof; wherein

the silver nitrate oxidizer composition has at least one of a crystalline phase transition, a melting point, a eutectic point, or a peritectic point at a temperature of no more than about 250°C; and wherein

the metal fuel is present in an amount at least substantially stoichiometric relative to the silver nitrate oxidizer composition ~~sufficient to provide a substantially stoichiometric mixture of metal fuel and oxidizer;~~ and

the mixture of metal fuel and silver nitrate oxidizer composition are ~~sufficiently intimately mixed to insure a sufficient degree of contact in the composition~~ has a mix intimacy and homogeneity sufficient between the silver nitrate oxidizer composition and the metal fuel to react in an autoignition reaction of metal fuel and silver nitrate

oxidizer composition at an autoignition temperature of no more than about 232°C, thereby providing provide an autoignition composition having an the autoignition temperature of no more than about 232°C; wherein

heating the autoignition composition to the autoignition temperature results in a reaction between the silver nitrate and the metal fuel, thereby initiating the autoignition reaction.

2. (Currently amended) The low temperature autoignition composition of claim 1, wherein the silver nitrate oxidizer composition is a comelt consisting essentially of comprising silver nitrate and at least one of an alkali metal nitrate, alkali metal nitrite, alkali metal chlorate, alkali metal perchlorate, alkaline metal nitrate, alkaline metal nitrite, alkaline metal chlorate, alkaline metal perchlorate, sodium nitrite, potassium nitrite, or silver nitrite.

3. (Canceled)

4. (Withdrawn) The low temperature autoignition composition of claim 2, wherein the powdered metal fuel is selected from the group consisting of molybdenum, titanium, zirconium, niobium, nickel, chromium, zinc, aluminum, and cerium.

5. (Withdrawn) The low temperature autoignition composition of claim 4, wherein the powdered metal fuel is selected from the group consisting of molybdenum, titanium, zirconium, zinc, and cerium.

6. (Withdrawn) The low temperature autoignition composition of claim 5, wherein the powdered metal fuel is molybdenum.

7. (Withdrawn and currently amended) The low temperature autoignition composition of claim 5, wherein the silver nitrate oxidizer composition is

selected from the group consisting of silver nitrate and comelts consisting essentially of ~~comprising~~ silver nitrate and potassium nitrate, silver nitrate and sodium nitrate, and silver nitrate and lithium nitrate.

8. (Withdrawn and currently amended) The low temperature autoignition composition of claim 5, wherein the silver nitrate oxidizer composition is a comelt consisting essentially of ~~comprising~~ silver nitrate and potassium nitrate.

9. (Withdrawn) The low temperature autoignition composition of claim 7, wherein the powdered metal fuel is molybdenum.

10. (Withdrawn) The low temperature autoignition composition of claim 9, wherein the comelt is ground to a particle size of about 10 to about 30 microns, and the molybdenum powder has a particle size of less than about 6 microns.

11. (Withdrawn) The low temperature autoignition composition of claim 7, wherein
the mole fraction of silver nitrate in the comelt is about 0.4 to about 0.6;
the mole fraction of potassium nitrate in the comelt is about 0.6 to 0.4; and
the comelt is mixed with at least a stoichiometric amount of molybdenum powder fuel.

12. (Withdrawn) The low temperature autoignition composition of claim 11, wherein the autoignition temperature is about 130-135°C.

13. (currently amended) The low temperature autoignition composition of claim 1, wherein the silver nitrate oxidizer composition consists essentially of ~~comprising~~ a mixture of silver nitrate and a solid organic nitrate[[,]] or a solid organic nitrite.

14. (currently amended) The low temperature autoignition composition of claim 13, wherein the silver nitrate oxidizer composition consists essentially of comprising a mixture of silver nitrate and guanidine nitrate.

15. (Previously amended) The low temperature autoignition composition of claim 13, wherein the powdered metal fuel is selected from the group consisting of molybdenum, titanium, zirconium, niobium, nickel, chromium, zinc, aluminum, and cerium.

16. (Previously amended) The low temperature autoignition composition of claim 13, wherein the powdered metal fuel is selected fuel from the group consisting of molybdenum, titanium, zirconium, zinc, and cerium.

17. (Original) The low temperature autoignition composition of claim 13, wherein the powdered metal fuel is molybdenum.

18. (Presently amended) The low temperature autoignition composition of claim 17, wherein the ~~amount of~~ molybdenum fuel is present in an amount greater than that required to form a mixture in which the amount of molybdenum fuel is stoichiometric amount relative to the silver nitrate oxidizer composition, thereby providing an autoignition composition having an autoignition temperature that is less than the autoignition temperature of a similar composition ~~having a~~ in which the amount of molybdenum fuel is stoichiometric relative to the silver nitrate oxidizer composition ~~amount of molybdenum fuel~~.

19. (Withdrawn and currently amended) The low temperature autoignition composition of claim 1, further consisting essentially of an alkali metal chloride, alkali metal fluoride, alkali metal bromide, alkaline earth metal chloride, alkaline earth metal fluoride, or alkaline earth metal bromide, ~~comelted with a nitrate, nitrite, chlorate, or perchlorate.~~

20. (Withdrawn and currently amended) The low temperature autoignition composition of claim 1, further consisting essentially of an output augmenting composition, consisting essentially of ~~which comprising~~ a metal in combination with an energetic oxidizer selected from the group consisting of ammonium perchlorate, alkali metal chlorates, alkali metal perchlorates, and alkali metal nitrates.

21. (Withdrawn and currently amended) The low temperature autoignition composition of claim 1, wherein the silver nitrate oxidizer composition consists essentially of ~~comprising~~ silver nitrate and a complex salt nitrate of at least one of $\text{Ce}(\text{NH}_4)_2(\text{NO}_3)_6$ ~~or~~ and $\text{ZrO}(\text{NO}_3)_2$.

22. (Withdrawn and currently amended) The low temperature autoignition composition of claim 1, wherein the silver nitrate oxidizer composition consists essentially of ~~comprising~~ silver nitrate and a dried[[,]] hydrated metal nitrate of $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ or $\text{Cu}(\text{NO}_3)_2 \cdot 2.5 \text{H}_2\text{O}$.

23. (Withdrawn) The low temperature autoignition composition of claim 1, further consisting essentially of a metal oxide catalyst.

24. (Withdrawn) The low temperature autoignition composition of claim 23, wherein the metal oxide catalyst is selected from the group consisting of Al_2O_3 , SiO_2 , CeO_2 , V_2O_5 , CrO_3 , Cr_2O_3 , MnO_2 , Fe_2O_3 , Co_3O_4 , NiO , CuO , ZnO , ZrO_2 , Nb_2O_5 , MoO_3 , and Ag_2O .

25. (Currently amended) The low temperature autoignition composition of claim 1, wherein the fuel consists essentially of ~~comprises~~ molybdenum and the silver nitrate oxidizer composition consists essentially of ~~comprises~~ a mixture of silver nitrate, potassium nitrate, and guanidine nitrate.

26. (Currently amended) A low temperature autoignition composition for safely initiating combustion of a main pyrotechnic charge in a gas generator or pyrotechnic device exposed to flame or a high temperature environment comprising:

a mixture of ~~an~~ a silver nitrate oxidizer composition and a powdered metal fuel; ~~[[,]]~~ wherein

the silver nitrate oxidizer composition comprises a mixture or a comelt comprising silver nitrate and at least one additional component selected from the group consisting of an alkali metal nitrate, an alkaline earth metal nitrate, a complex salt nitrate, a dried hydrated nitrate, silver nitrate, an alkali metal chlorate, an alkali metal perchlorate, an alkaline earth metal chlorate, an alkaline earth metal perchlorate, ammonium perchlorate, sodium nitrite, potassium nitrite, silver nitrite, a complex salt nitrite, a solid organic nitrate, and a solid organic nitrite; ~~wherein~~

the metal fuel is present in an amount at least substantially stoichiometric relative to the silver nitrate oxidizer composition ~~sufficient to provide a substantially stoichiometric mixture of metal fuel and oxidizer;~~ and

the mixture of metal fuel and silver nitrate oxidizer composition ~~are sufficiently intimately mixed to ensure a sufficient degree of contact~~ has a mix intimacy and homogeneity sufficient in the composition between the silver nitrate oxidizer composition and the metal fuel to react in an autoignition reaction of metal fuel and silver nitrate oxidizer composition at an autoignition temperature of no more than about 232°C, ~~thereby providing~~ provide an autoignition composition having ~~an~~ the autoignition temperature of no more than about 232°C; wherein

heating the autoignition composition to the autoignition temperature results in a reaction between silver nitrate and the metal fuel, thereby initiating the autoignition reaction.

27. (Presently amended) The low temperature autoignition composition of claim 26, wherein the metal fuel is present in an amount sufficient to form a fuel rich composition, thereby providing an autoignition composition having an autoignition

temperature that is less than the autoignition temperature of a similar composition having a stoichiometric amount of metal fuel.

28. (Presently amended) The low temperature autoignition composition of claim 27, wherein the powdered metal fuel is chosen from the group consisting of molybdenum, magnesium, calcium, strontium, barium, titanium, zirconium, vanadium, niobium, tantalum, chromium, tungsten, manganese, iron, cobalt, nickel, copper, zinc, cadmium, tin, antimony, bismuth, aluminum, and silicon.

29. (Previously amended) The low temperature autoignition composition of claim 27, wherein the fuel comprises molybdenum and the silver nitrate oxidizer composition comprises ~~a mixture of~~ silver nitrate, potassium nitrate, and guanidine nitrate.

30. (Previously added) The low temperature autoignition composition of claim 1, further consisting essentially of a solid organic amine.

31. (Previously added) The low temperature autoignition composition of claim 13, further consisting essentially of a solid organic amine.

32. (Previously added) The low temperature autoignition composition of claim 26, further comprising a solid organic amine.